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ABSTRACT SUBMITTAL FORM

Deadline: Wednesday, 10 July 1996

Subject Classification Category 7.5 Pinches ☒ Theory ☐ Experiment

Energetics in Imploding Z-Pinches D. Reisman[2,3], C. Deeney[2], J. S. De Groot[1,2,3], K. G. Estabrook[1], J. H. Hammer[1], T. W. L. Sanford[2], R. B. Spielman[2], and A. Toor[1]; [1]Lawrence Livermore National Laboratory, [2]Sandia National Laboratories, [3]UC Davis. High atomic number imploding z-pinches are prodigious x-ray radiators. Magnetic energy is converted to radial kinetic energy during the implosion. Surprisingly, the x-ray yield, Y, is larger than the radial kinetic energy. This extra energy increases with atomic mass (~ 0.2 Y in aluminum to ~ 0.5 Y in gold and tungsten). We have recently observed on the SATURN accelerator at SNL (see poster by C. Deeney this session) that the time scale for the development of this energy is reduced by improving the compression ratio. Mechanisms to convert the extra magnetic energy to electron thermal energy will be reviewed in light of the experimental results

*Work performed under the auspices of the U.S. DOE by the LLNL under Contract W-7405-ENG-48.

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